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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,968	05/10/2001	Junichi Sasaki	OSP-10578	4115

7590 10/16/2003

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EXAMINER

HYEON, HAE M

ART UNIT PAPER NUMBER

2839

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

EC

Office Action Summary

Application No.

09/851,968

Applicant(s)

SASAKI ET AL.

Examiner

Hae M Hyeon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 5-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of the species 1, Figures 1-2 in Paper No. 7 is acknowledged.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the inclined grooves must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claims 3 and 4 recite for inclined grooves formed on the optical waveguide, but the present specification and the drawings only disclose one inclined groove.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "67". A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

While Figure 11 shows the reference number 67, the present specification page 20 explains Figure 11 without the reference number 67.

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4. The drawings are objected to because the cross-sectional views of the drawings are not using correct cross-hatching lines to represent the appropriate materials for each element. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5. Figures 15-19 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:

- On page 18, line 15, "the Si sum-mount" should be -- the Si sub-mount --.

Appropriate correction is required.

Claim Objections

7. Claims 3 and 4 are objected to because of the following informalities:

- Claim 3 recites the limitation "the propagation direction of the light" in line 2. There is insufficient antecedent basis for this limitation in the claim.
- Claim 4 recites the limitation "the propagation direction of the light" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kropp (6,227,722 B1) in view of Bruce et al (6,312,581 B1).

Kropp discloses an optical module comprising an optical waveguide having multiple cores 4 buried in a clad 30, a rectangular-shaped optical waveguide substrate 60 including high precision steps 64 formed along a longitudinal direction of the substrate 60 on both sides of an upper surface 61 of the substrate 60, and an optical fiber connecting end member 70 including guide pin insertion holes 23 and 24 and a through hole (open space pointed by the reference number 25 in Figure 1) for accommodating and fixing an end surface of the substrate 60. The optical waveguide is mounted on the substrate 60. On an inside of the through hole, steps 68 are formed so as to fit the high precision steps 64 when the substrate 60 is inserted in the through hole. However Kropp does not disclose the substrate 60 to be silicon optical waveguide substrate.

Bruce teaches that the silicon substrate is already known type of optical waveguide substrate in optical fiber communication system.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the substrate taught by Kropp such that it would be formed from a silicon substrate as taught by Bruce because the silicon substrate is already known and

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used substrate in optical fiber communication system. Thus, the use of the silicon substrate only deals with the use of a preferred material. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

10. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kropp and Bruce et al as applied to claims 1 and 2 above, and further in view of Kawaguchi et al (6,361,222 B1).

Claims 3 and 4 recites that the optical waveguide includes an inclined groove relative to the propagation direction of the light and a light reflecting device provided on the inclined groove.

While Kropp does not disclose an inclined groove and a light reflecting device, Kawaguchi discloses an optical module having an optical waveguide 12 with an inclined groove 23 and a light reflecting device 15 provided on the inclined groove 23. The light reflecting device 15 reflects a signal light beam having a specific wavelength and guides it to a reception photodiode 14b.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the optical module taught by Kropp such that it would have an inclined groove and a light reflecting device on an optical waveguide as taught by Kawaguchi because the inclined groove and the light reflecting device can reflect a specific wavelength in a signal light beam to a specific device.

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Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 5,163,118 by Lorenzo et al., US Patent No. 5,345,530 by Lebby et al., US Patent No. 5,715,338 by Sjolineder et al., US Patent Application Publication 2001/0028768 A1 by Terashima, US Patent No. 6,352,372 B1 by Shahid, US Patent No. 6,374,021 B1 by Nakanishi et al., and US Patent No. 6,393,171 B2 by Sasaki et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hae M Hyeon whose telephone number is 703-308-4802. The examiner can normally be reached on Mon.-Fri. (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D Feild can be reached on 703-308-2710. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Any response to this action may be mailed to:

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

For additional information regarding this new address, which was effective May 1, 2003, *see Correspondence with the United States Patent and Trademark Office*, 68 Fed. Reg. 14332 (March 25, 2003).

Or Faxed to:

(703) 308-7722 or 308-7724

(Informal or draft communications should be clearly labeled "PROPOSED" or "DRAFT")

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Hand-delivered responses should be brought to:
Crystal Plaza 4, Fourth Floor (Receptionist)
2201 South Clark Place, Arlington, Virginia.

Hae M Hyeon
Examiner
Art Unit 2839

hnh

hnh

Hae Moon Hyeon